

EDNS Version 1
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Abstract

It is impracticable to deploy new EDNS options, with EDNS version 0, on a global scale due to inconsistent server behaviour in deployed servers when a EDNS option is present in the query. Most existing EDNS option deployment has been small scale between essentially consenting implementations.

When EDNS options were added to every outgoing recursive query made it became clear that trial and error to discover the level of EDNS version 0 support was not practicable.

This document request that EDNS version 1 be assigned so that consistent well defined behaviour can be seen when a EDNS option is present.

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1. Introduction

Extended DNS (EDNS) supports adding EDNS options to the request. Unfortunately it was not clear in the original specification [RFC 2671] that unknown EDNS options should be ignored. The updated EDNS specification [[RFC 6891](#)] makes ignoring unknown EDNS options an explicit requirement but failed to bump the EDNS version number.

Currently there are EDNS version 0 servers that ignore unknown EDNS options. Those that return FORMERR when unknown EDNS options are present. Those that return BADVERS when unknown EDNS options are present. Those that return REFUSED when unknown EDNS options are present and presumably those that return NOTIMP (though the author has not seen one).

FORMERR, REFUSED and NOTIMP are all returned from servers that do not support EDNS. It is impracticable for clients to have yet more overloading of these error codes and more trial and error to work out what is and is not supported when there is a clear method available to resolve the differences.

This document requests EDNS version 1 be assigned and that the EDNS behaviour be that of [[RFC 6891](#)] with the exception of the version being 1 rather than 0. EDNS version 1 clients then will have well defined behaviour when sending unknown EDNS options (they should be ignored) to EDNS version 1 servers. BADVERS to EDNS version 0 servers and FORMERR, REFUSED, NOTIMP to servers that do not support EDNS and return an error code.

This is effectively a protocol reset for EDNS.

2. EDNS Version 1

EDNS version one behaviour is identical to that described in [RFC 6891] with the exception that the EDNS version is assigned to 1.

[3.](#) IANA Considerations

This document be the reference document for EDNS version 1.

[4.](#) Security Considerations

The document does not introduce any security issues that are not addressed in [[RFC 6891](#)].

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[5.](#) References

[5.1.](#) Normative References

[RFC 6891]

Damas, J., Graff, M., and P. Vixie, "Extension Mechanisms for DNS (EDNS(0))", STD 75, [RFC 6891](#), April 2013.

[5.2.](#) Informative References

[RFC 2671]

Vixie, P., "Extension Mechanisms for DNS (EDNS0)", [RFC 1999](#), August 1999.

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